

**REMARKS**

**CLAIM REJECTIONS**

**35 USC §102**

Claims 1-3, 5-17, and 32-48

Claims 1-3, 5-17, and 32-48 are rejected under 35 U.S.C. 102(b) as being anticipated by Reeh (US 2001/0000622) (hereafter "Reeh"). Claims 1, 32, and 44 are independent claims from which claims 2, 3, 5-17, 33-43, and 45-48 depend.

***Independent Claim 1***

Reeh does not disclose all the limitations of claim 1. Claim 1 requires "hemispheric shaped conversion material region formed separately from said light source and including *conversion particles throughout*" (emphasis added). Reeh does not teach or disclose this element. Instead, Reeh discloses a recess 9 covered by a luminescence conversion layer 4, upon which a covering 29 in the form of a lens can be provided on the luminescence conversion layer 4. (Reeh: Page 7, paragraphs [0093] and [0094]).

The Office cites FIG. 3 of Reeh as disclosing the limitations of claim 1. However, FIG. 3 of Reeh does not disclose that luminescence conversion layer 4 is a hemispheric shaped conversion material region. Instead, FIG. 3 discloses that luminescence conversion layer 4 is a planar structure, "for example a separately produced covering plate 17." (Reeh: Page 7, paragraph [0093]). Also, Reeh does not disclose that

covering 29 has conversion particles throughout the covering 29, or at all. The conversion particles in FIG. 3 of Reeh are within luminescence conversion layer 4, and there is no suggestion in Reeh that conversion particles may be present in covering 29. The Office states that Reeh "teaches an alternative lens structure, wherein the lens component is itself the conversion material region," (Office Action: Page 9), and references paragraph [0091] of Reeh as support. Paragraph [0091] states:

This covering 29 in the form of a lens may be composed of transparent plastic or glass and be bonded, for example, onto the luminescence conversion layer 4 or be designed directly as the component part of the luminescence conversion layer 4. (emphasis added).

The passage of paragraph [0091] does not disclose an alternative lens structure wherein the lens component is itself the conversion material region. Paragraph [0091] discloses that the covering 29 can be formed as part of the luminescence conversion layer 4, forming a single structure as opposed to bonding two individual parts together. Additionally, FIGs. 2 and 3 clearly depict covering 29 as not having conversion particles. According to this passage, covering 29 could be an element of luminescence conversion layer 4, but that does not indicate that covering 29 assumes the properties of luminescence conversion layer 4. Reeh does not contain an embodiment which discloses having conversion particles throughout covering 29.

In the alternative, even if paragraph [0091] were to disclose an alternative lens structure as proffered by the Office, the device of Reeh is not "shaped such that said light passing through travels through substantially similar thicknesses of said conversion material region." Light emitted

from the emitter at different angles will pass through different amounts of conversion material, and this can result in a non-uniform emission pattern.

Therefore, Reeh does not teach all of the limitations of claim 1, which should thus be allowable.

Claims 2, 3, and 5-17 depend from allowable claim 1 and are allowable for at least the same reasons as claim 1.

***Independent Claim 32***

Claim 32 contains limitations similar to claim 1. Applicant submits that the arguments of patentability for claim 1 apply to claim 32 with equal force.

Therefore, Reeh does not teach all of the limitations of claim 32, which should thus be allowable.

Claims 33-43 depend from allowable claim 32 and are allowable for at least the same reasons as claim 32.

***Independent Claim 44***

Reeh does not teach the limitations of claim 44. Claim 44 requires "a substantially hemispherical lens element having a uniform distribution of wavelength conversion material dispersed throughout." Claim 44 contains limitations similar to claim 1. Applicant submits that the arguments for patentability for claim 1 apply to claim 44 with equal force.

Also, Reeh does not teach or disclose a substantially hemispheric lens element having a uniform distribution of wavelength conversion material dispersed throughout as required by claim 1. Instead Reeh discloses that color temperature can be "varied by a suitable choice of the luminescence conversion

element, in particular by a suitable choice of the luminescent material, its particle size and its concentration." (Reeh: paragraph [0025]). Reeh discloses that color temperature is varied in relation to the concentration of the luminescence conversion element, but the concentration levels do not disclose that there is a uniform distribution of the luminescence conversion element. Reeh further discloses, "it is possible to configure luminescence conversion elements inhomogeneously, for example by means of inhomogeneous luminescent material distribution." (Id). This directly contradicts the requirement of a uniform distribution of conversion material dispersed throughout the lens of claim 44. Reeh's disclosure on the effects the concentration of the luminescence conversion element and inhomogenous distribution of luminescent material do not disclose the requirements of the lens in claim 44. Thus, Reeh teaches away from having a substantially hemispherical lens having a uniform distribution of wavelength conversion material dispersed throughout.

Therefore, Reeh does not teach all the limitations of claim 44, which should thus be allowable.

Claims 45-48 depend from allowable claim 44 and are allowable for at least the same reasons as claim 44.

Claims 18-21, 23, 24, and 27-31

Claims 18-21, 23, 24, and 27-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Odaki (US 2001/0050371) (hereafter "Odaki"). Claim 18 is an independent claim from which claims 19-21, 23, 24, and 27-31 depend.

***Independent Claim 18***

Odaki does not disclose all the limitations of claim 18. Claim 18 was amended and requires "said light source comprising a first and second electrical contacts on opposite surfaces of said light source" and further requires "said conversion material region comprising a phosphor loaded cap perforated to allow said first contact to be housed within said phosphor loaded cap." Support for this amendment is found, for example, at US 2005/0093430: Page 5, paragraph [0070] and FIGs. 15 and 16, which states:

a contact is deposited on the LED's bottom surface and another contact is deposited on the LED's top surface. The cap is perforated on its top surface and when it is bonded to the LED the top contact is housed in, and accessible through, the perforation.

Odaki does not teach or disclose a first and second contact on opposite surfaces of the light source, nor a perforated phosphor loaded cap as required by claim 18. Instead, Odaki discloses an LED device having a fluorescent substance, containing a phosphor, in the form of a layer is placed on an outer surface of the light-emitting element. (Odaki: paragraph [0048] and FIG. 1B). The Office refers to fluorescent layer 2' in FIG. 1B of Odaki as being analogous to the conversion material region of claim 18. However, fluorescent layer 2' is not perforated as required in claim 18. As a result, fluorescent layer 2' is not analogous to the conversion material region of claim 18. Furthermore, none of the remaining embodiments in Odaki teach the conversion material region of claim 18, because the members containing the phosphor material are not perforated to interface with the first contact as required by claim 18.

An advantage of the perforated phosphor loaded cap in claim 18 is that this configuration allows "top contact 158 [to be] arranged within, and accessible though, top perforation 160" after the phosphor loaded cap is bonded to the light source. (US 2005/0093430: Page 5, paragraph [0066]). Furthermore, the conversion material region, in claim 18, comprising the phosphor loaded cap is formed separately from the light source, and this allows for the emitter to be tested prior to the phosphor loaded cap being bonded to the light source. (*Id* at paragraph [0069]). If the emitter has substandard emission or is otherwise defective, then a determination can be made as to whether the light source or phosphor loaded cap is defective. (*Id*). The defective component can then be discarded and substituted with a new component. The replacement process avoids the waste associated with the conventional manufacturing processes where the entire emitter is discarded if the emission is substandard. In Odaki, the resin composition containing red phosphor 4 is formed on the substrate by molding the resin into the desired shape. (Odaki: Page 3, paragraph [0050]). Thus, the resin composition is not formed separately from the light source, but is formed after the resin is deposited on the substrate and molded into the desired shape.

Therefore, Odaki does not disclose all the limitations of claim 18, which should thus be allowable.

Claims 19-21, 23, 24, and 27-31 depend from allowable claim 18 and are allowable for at least the same reasons as claim 18.


Applicant requests that the rejection of claims 1-3, 5-21, 23, 24, and 27-48 under 35 U.S.C 102 be withdrawn.

**CONCLUSION**

Applicant respectfully submits that claims 1-3, 5-21, 23, 24, and 27-48 are allowable and request that a timely Notice of Allowance be issued in this case.

Respectfully Submitted,

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